

## REMARKS

The Office Action dated November 30, 2006 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claim 7 has been amended to more particularly point out and distinctly claim the subject matter of the invention. No new matter has been added. Claims 1-15 and 17-41 are submitted for consideration.

The amendments made to claims 1, 18, 30-31 and 38-39, in the previous Response, were objected to under 35 U.S.C. 132(a) because the Office Action alleged that the amendments introduced new matter not disclosed in the original disclosure. Specifically, the Office Action alleged that the “first radio link” and “average power per bit” recited in claims 1, 18, 30-31 and 38-39 are not in the original disclosure. Applicants note that paragraphs 0049 and 0050 of the current specification disclose two links, i.e., the radio resource link and the transport resource link. Furthermore, it is noted that now deleted dependent claim 16 specifically referred to ‘said first link comprises a radio link’. Therefore, Applicants submit that there is support in the original specification for the first radio link as recited in the claims. Applicants also note that paragraphs 0052 and 0053 disclose using the average power per bit. In addition, paragraphs 0050 and 0051 of the original specification disclose ‘a lower average power/bit’ and ‘a lower average required power per correctly received bit.’ Therefore, Applicants submit that there is support in the original specification for the average power per bit as recited in the claims. Based on

the disclosures in the original specification, Applicants request that this objection be withdrawn.

Claim 7 was objected to because of informalities. Claim 7 has been amended to overcome this objection. Therefore, Applicants request that this objection be withdrawn.

The disclosure was objected to because of informalities. Specifically, the disclosure was objected to because paragraph 0006 is missing the word “mobile” in the last sentence and because the third line of paragraph 0008 is missing the word “if” between the words “check” and “there”. In the Response to the previous Office Action filed on September 12, 2006, the disclosure was amended to include “mobile” in the last sentence of paragraph 0006 and “if” between the words “check” and “there” of paragraph 0008. Therefore, Applicants submit this objection is an error and request that this objection be withdrawn.

Claims 1-18, 30-31, 34 and 35-37 were rejected under 35 U.S.C. 102(b) as being anticipated by IEEE document XP010642591 to Cheung. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in claims 1-18, 30-31, 34 and 35-37.

Claim 1, upon which claims 2-15 and 17 depend, recites a method including determining if a first radio link or a second link of a plurality of links is limiting capacity of a connection including the first radio link and the second link. The method also includes changing at least one parameter relating to at least one of the first and the second links to change the capacity of the first link or the second link if the at least one of the first and the

second links is limiting capacity of the connection, whereby the average power per bit in the radio link is changed.

Claim 18 recites a method including determining if a first radio link or a second link is limiting capacity of a connection including the first radio link and the second link. The method also includes changing at least one parameter relating to at least one of the first and the second links whereby the other of the first and the second links is used to improve the quality of the connection if the one of the first and the second links is limiting capacity, and whereby the average power per bit in the radio link is changed.

Claim 30, upon which claims 34 and 35 depend, recites a controller including a determining unit configured to determine if a first radio link or a second link is limiting capacity of a connection including the first radio link and the second link and a unit configured to cause at least one parameter relating to at least one of the first and the second links to be changed, thereby changing the capacity of the at least one of the first and the second links, if the first link or the second link is limiting capacity in the connection, whereby the average power per bit in the radio link is changed.

Claim 31 recites a controller including a determining unit configured to determine a first radio link or a second link is limiting capacity of a connection including the first radio link and the second link. The controller also includes a unit configured to cause at least one parameter relating to at least one of the first and the second links to be changed if the first link or the second link is limiting capacity whereby another of the first and second links is used to

improve the quality of the connection, whereby the average power per bit in the radio link is changed.

Claim 36 recites a system including a first entity, a second entity and a third entity, wherein a connection is establishable between the first, second and third entities with a first link provided between the first entity and the second entity and a second link provided between the second entity and the third entity. The system also includes a controller for controlling the connection including the first link and the second link, the controller including a determining unit configured to determine if the first link or the second link is limiting capacity of the connection and changing at least one parameter for relating to at least one of the first and the second links to change the capacity of the first link or the second link if the one of the first and the second links is limiting capacity in the connection

Claim 37 recites a computer program product embodied on a computer readable medium, the computer program product including software code portions, the software code portions, when executed, to effect determining if a first link or a second link is limiting capacity of a connection including the first link and the second link. The code portions also effect changing at least one parameter relating to at least one of the first and the second links to change capacity of the first link or the second link if the one of the first and the second links is limiting capacity in the connection.

As outlined below, Applicants submit that the cited reference of Cheung does not teach or suggest the elements of claims 1, 18, 30, 31, 36 and 37 and the dependent claims thereon.

Cheung describes a method of optimizing the use of bandwidth for a stream of data. Excess bandwidth in a non-limiting link is utilized to provide error correction in that link in order to increase the overall Quality of Service (QoS). In the method described by Cheung, the streamed data is transmitted at the maximum rate supported by both links. Normally, one link has a higher bandwidth capability and this excess bandwidth may be unused. Cheung teaches determining which link is limiting. If the wireless link is found to be limiting, a server transmits the data, along with FEC codes to allow for wireless losses, at the maximum rate of the wireless network. Excess bandwidth in the wired network is used to resend lost packets to improve the overall QoS. If it is found that the wired network is limiting, the server transmits the data at the maximum rate of the wired network without including any FEC codes, these codes are then added at the wired/wireless junction to allow for losses in the wireless network.

Applicants submit that Cheung does not teach or suggest each element of claims 1, 18, 30, 31, 36 and 37. As previously noted, each of independent claims 1, 18, 30, 31, 36 and 37 recites, in part, changing one or more parameters relating to at least one of the links to change the capacity of at least one of the links, whereby the average power per bit in the radio link is changed. Cheung only considers the situation when a single stream of data is transmitted with a mismatch of available bandwidth in the two links.

In the method described by Cheung, in each case, the data transmitted on the wireless network includes a layer of FEC to combat wireless loss. The FEC bits, disclosed in Cheung, may originate at the server if the wireless network is limiting or at the wired/wireless link if the wired network is limiting. Therefore, in Cheung, the ratio of transmitted bits to data bits in the wireless network, and the power per data bit in the absence of any other feature affecting the transmit power, is the same in both cases. Thus, Cheung does not teach or suggest changing one or more parameters relating to at least one of the links to change the capacity of at least one of the links, whereby the average power per bit in the radio link is changed, as recited in claims 1, 18, 30, 31, 36 and 37. Based on the above, Applicants respectfully assert that the rejection under 35 U.S.C. §102(b) should be withdrawn because Cheung fails to teach or suggest each feature of claims 1, 18, 30, 31, 36 and 37 and hence, dependent claims 2-17, 34, and 35 thereon.

Claims 19-29 and 32-33 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent Publication No. 20020146024 to Harris. The rejection is traversed as being based on a reference that neither teaches nor suggests the novel combination of features clearly recited in claims 19-29 and 32-33.

Claim 19, upon which claims 20-28 depend, recites a method including determining if resources are available in a first link and a second link for a given bit rate to select a bit rate for a connection including a first link and second link. The method also includes selecting a bit rate from a plurality of bit rates for which it is determined in the determining that

resources are available in both the first and the second links and using the selected bit rate in the connection.

Claim 29 recites a method including selecting a new bit rate for a connection of a plurality of connections to change a bit rate for one of the plurality of connections including a first link and a second link. The method also includes determining if resources are available in both the first and second links for the new bit rate and selecting the new bit rate for the connection if the resources are available.

Claims 32 recites a controller including a determining unit configured to determine a plurality of bit rates if resources are available in both a first and second links for a given bit rate to select a bit rate for a connection including a first link and a second link; and a selecting unit configured to select a bit rate for which it is determined in the determining that the resources are available in both the first and second links.

Claim 33 recites a controller including a unit configured to select a new bit rate for one connection to change the bit rate for the one connection of a plurality of connections including a first link and a second link and a unit configured to determine if resources are available in both the first and second links for the new bit rate. The controller also includes a unit configured to select the new bit rate for the connection if the resources are available.

As outlined below, Applicants submit that the cited reference of Harris does not teach or suggest the elements of claims 19-29 and 32-33.

Harris describes a method of optimizing a transmission rate for a data stream in a wireless network to match an unknown bottleneck bandwidth located in a wired network.

The described method monitors the length of the transmission queue for the wireless network increasing the transmission rate of the wireless network if queue size increases beyond an upper threshold value and decreasing transmission rate if the queue size decreases below a lower threshold. In this way, the allocated bandwidth in the wireless network is altered until it matches the bottleneck bandwidth which is assumed to be in the wired network. The case in which the wireless network limits available bit rate is not considered.

Applicants submit that Harris does not teach or suggest each element of claims 19-29 and 32-33. Each of independent claims 19, 29 and 32-33 recites, in part, determining that resources are available in both the first and the second links and using the selected bit rate in the connection. Harris does not disclose determining if resources are available for a certain bit rate in both networks as required by claims 19, 29 and 32-33 but rather chooses a bit rate for the wireless network to match an unchangeable bit rate in the wired network.

The method of Harris relates only to a data stream transmitted from the wired network to the wireless device, and is only applicable to the case where the wired network, or computer infrastructure, limits the data rate of the data stream. There is no suggestion of “for a plurality of bit rates determining if resources are available in both said first and second links for a given bit rate” as recited in claims 19, 29 and 32-33. Rather, in Harris, it is assumed that the wired network is operating at its maximum bit rate in carrying the data stream, and that the wireless network is capable of a higher bit

rate than the wired network. Indeed, there is no teaching or suggestion in Harris of determining the available bit rate in either of the links as it is simply assumed by the method of Harris that the bottleneck will lie in the wired part and that the wireless link can be set to any required bandwidth as required by the disclosed algorithm.

The above described deficiencies in the method of Harris mean that the usefulness of the method is restricted to the limited case of a data stream being transmitted from the wired part to the wireless part with the data speed bottleneck located in the wired part of the network. In contrast, embodiments of the present invention are applicable to the more general case of data flowing in either direction and with the bottleneck lying in either part of the network. This is achieved through the feature of 'for a plurality of bit rates determining if resources are available in both said first and second links for a given bit rate'. As discussed above, there is no suggestion of this feature in Harris. Therefore, Applicants respectfully assert that the rejection under 35 U.S.C. §102(b) should be withdrawn because Harris fails to teach or suggest each feature of claims 19, 29 and 32-33 and hence, dependent claims 20-28 thereon.

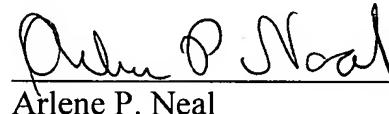
As noted previously, claims 1-15 and 17-41 recite subject matter which is neither disclosed nor suggested in the prior art references cited in the Office Action. It is therefore respectfully requested that all of claims 1-15 and 17-41 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



\_\_\_\_\_  
Arlene P. Neal  
Registration No. 43,828

**Customer No. 32294**  
SQUIRE, SANDERS & DEMPSEY LLP  
14<sup>TH</sup> Floor  
8000 Towers Crescent Drive  
Tysons Corner, Virginia 22182-2700  
Telephone: 703-720-7800  
Fax: 703-720-7802

APN: jkm

Enclosures: Petition for Extension of Time  
Check No. 16123